

Owner's Manual

BOSE® **MODEL 601**

Direct/Reflecting® Speaker System

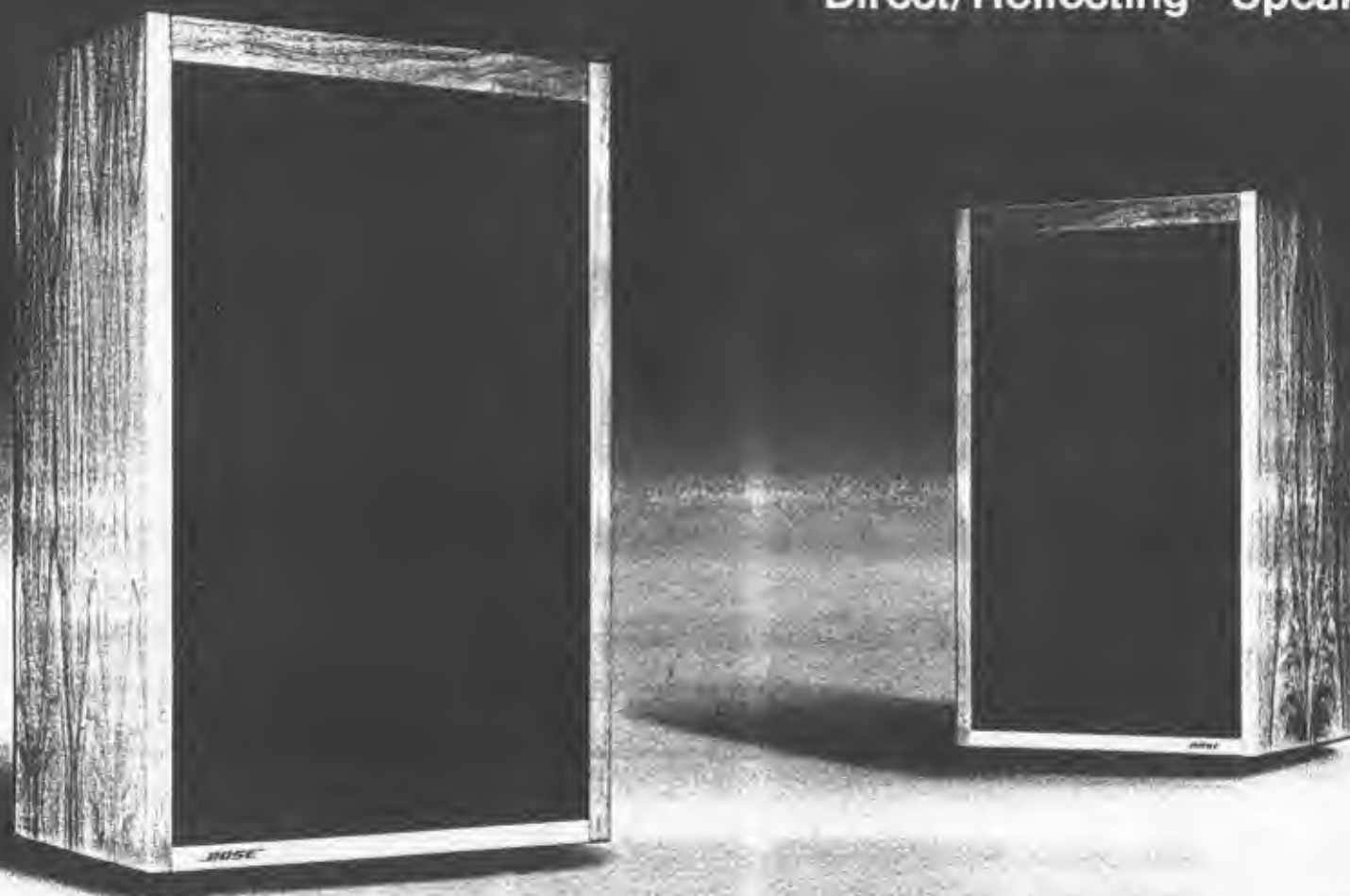


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I. Introduction

Thank you for purchasing the BOSE Model 601 Direct/Reflecting® loudspeaker. This speaker is the result of many years of research into the art and science of bringing superb musical reproduction into your home.

The Model 601 uses the acoustics of your listening room to simulate the open sound quality normally associated with live performances. Additionally, the Model 601 utilizes a Symmetry Control that allows placement of the speaker in a wide variety of listening room positions.

The tonal balance of the Model 601—like that of all BOSE loudspeakers—is exceptionally accurate. This is accomplished by a unique arrangement of two eight-inch woofers and four three-inch tweeters providing the correct balance of total acoustic energy at every frequency.

The 601 speaker system features a high efficiency design, allowing reproduction of high volume levels with relatively low amplifier power. Receivers and amplifiers as small as 15 watts per channel will provide outstanding performance.

At BOSE, each speaker system is subjected to extensive mechanical and electrical quality control testing. This combination of outstanding performance and consistent quality makes the Model 601 an exceptional value. Since the 601's design and operation is significantly different than that of conventional loudspeakers, PLEASE TAKE THE TIME TO READ THIS MANUAL.

II. Unpacking Your Model 601s

The BOSE Model 601 speaker system is packed in two cartons marked "Part 1" and "Part 2." Unpack each speaker carefully. Save the carton and all packing materials for possible use later. If either speaker appears to be damaged when unpacked, do not place the damaged speaker in operation. Repack the speaker(s) in its original carton and notify your dealer immediately.

III. Design Features

The BOSE Model 601 speaker system incorporates two eight-inch woofers, four three-inch tweeters, a tuned port enclosure, and a unique new Symmetry Control providing outstanding flexibility and performance in your listening room. (See Figure 1.)

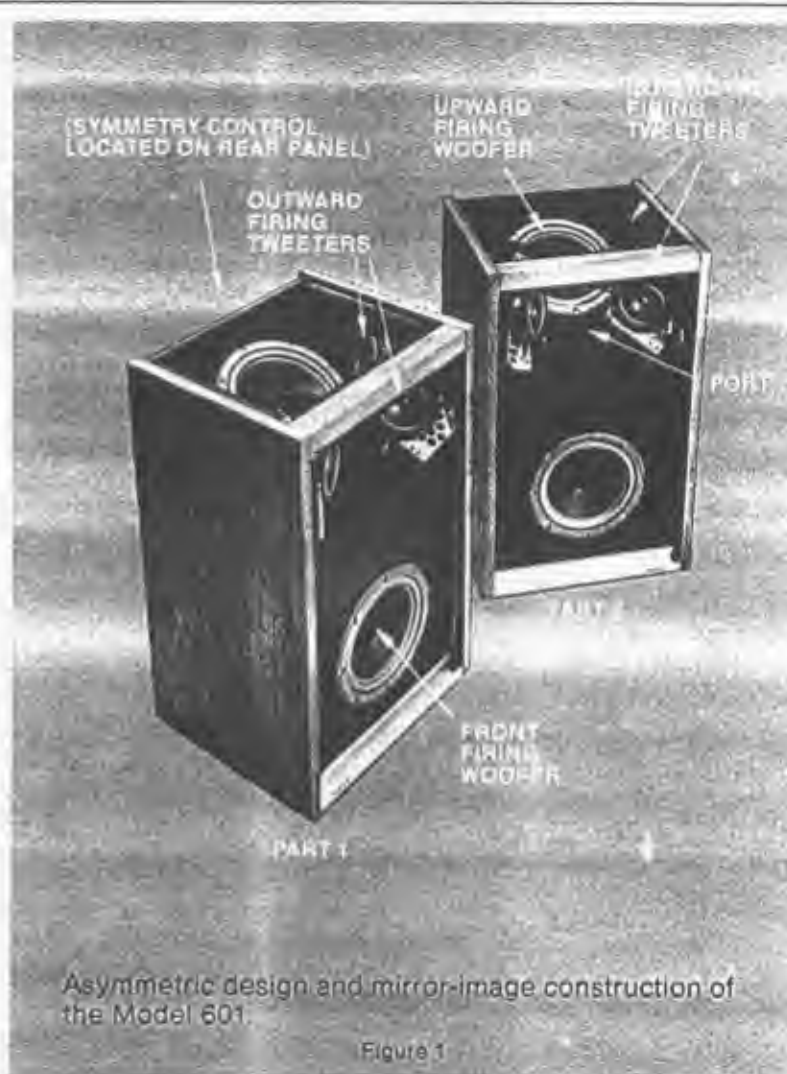
This system's two eight-inch woofers (one facing the front grille and another radiating through the acoustically transparent top grille) provide outstanding bass response while simultaneously providing a balance of reflected and direct sound.

Four identical tweeters are used in the Model 601 speaker system to simulate the distribution of sound energy normally associated with live performances. Radiating sound through both the front and the acoustically transparent top, the tweeter system "crossfires" the high-frequency energy via the reflecting walls of your listening room. This unique design provides multiple sound reflections creating a sense of spaciousness with a strong center image.

The Model 601 crossover network incorporates a unique control that modifies the spatial performance of the speaker. Unlike most crossover controls that change the tonal balance of the speaker, the 601's Symmetry Control is designed to affect the spatial characteristics of the speaker, while leaving the tonal balance unchanged. The Symmetry Control has two settings, "Asymmetric" and "Symmetric."

In the "Asymmetric" position, the Model 601 loudspeaker produces optimum spatial performance using the reflecting walls of your listening room. If not all necessary reflecting surfaces are present, the Symmetry Control can be adjusted to the "Symmetric" position.

The 601 speaker system is designed in mirror-image pairs with each speaker providing either "Symmetric" or "Asymmetric" sound radiation depending upon the position of the Symmetry Control.



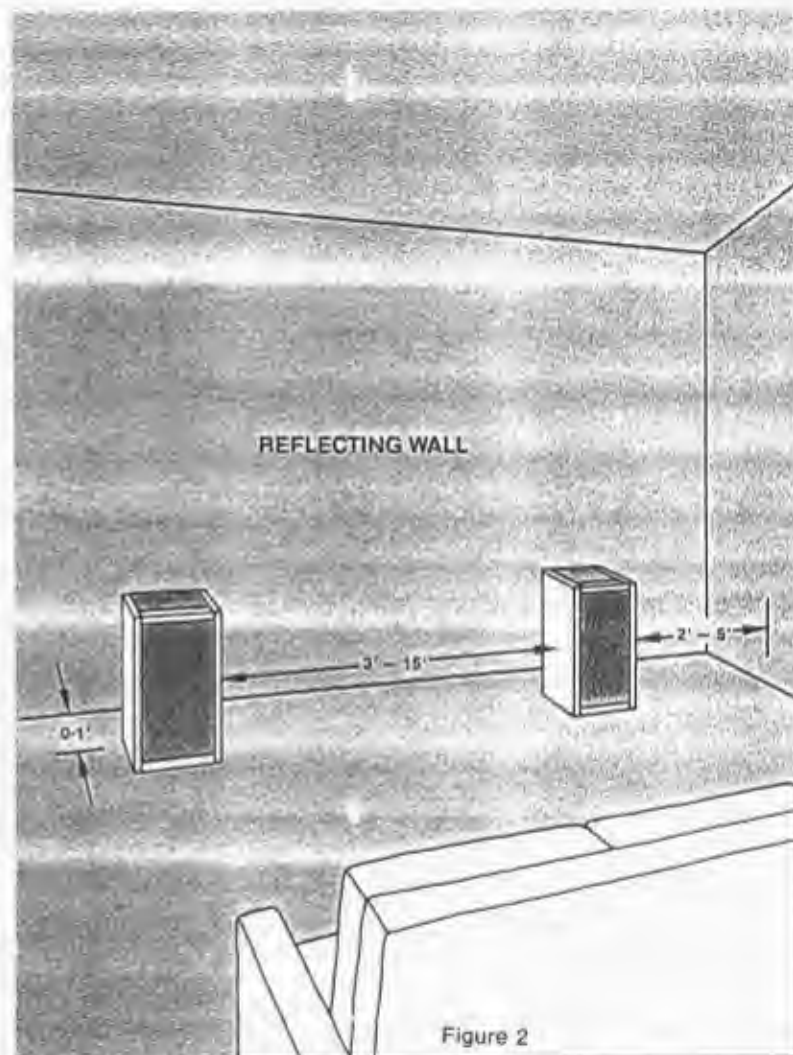
IV. Installation Instructions

A. SPEAKER PLACEMENT

The Model 601 speaker, unlike conventional speaker systems, reflects a large portion of the high-frequency energy off nearby walls, ceiling, and floor. Heavy paneling, sheet-rock, brick or wood surfaces generally provide the best reflective surfaces. The unique operation of the tweeter system allows the user to place the speaker in a wide variety of room locations and still obtain an unusually large "best listening area."

To obtain optimum performance from your Model 601s, it is necessary to follow a few simple placement guidelines. The basic idea is to allow the sound to develop "around" the speaker system. (See Figure 2.)

1. Place the rear of the speaker system against the wall behind the speakers. Excellent results can be obtained with the speakers located against the wall and up to 12" from the rear wall.
2. The speakers should be at least 18" from the side walls. (Suggested distance is two to five feet.) Large objects (such as furniture) should not be placed in front of the speaker system.
3. Best results will be obtained when the speakers are spaced six feet to twelve feet apart. However, separation as small as three feet or as great as fifteen feet will still give excellent results.
4. Since 50% of the sound energy of each Model 601 speaker system is radiated through the top of the enclosure, it is most important not to block or cover the top of the grille panel. We do not recommend placing any object over about four inches in diameter on the top grille panel. Also, objects over 30 lbs. should not be placed on the top of the speaker cabinet.



Installation Instructions

B. CONNECTING THE SPEAKERS

1. Choosing The Correct Wire

It is important to choose the correct wire size for your speaker system. If the wire used to connect the speakers to your amplifier is too small (has too much resistance), audible coloration of the sound and loss of power can result. The table below specifies the correct wire gauge necessary for various wire lengths. Copper zipcord, readily available at most electrical and hardware stores, can be used for speaker connection. Normally, this wire will have a ribbed line(s) running along one of the conductors so that each wire can be easily identified for proper phasing of your speaker system.

RECOMMENDED CONNECTION WIRE†

Maximum Wire Length	Wire Gauge
30 feet	18-gauge, zip-cord (or two-conductor wire)
45 feet	16-gauge, two-conductor wire
70 feet	14-gauge, two-conductor wire

† The wire lengths shown in the table above were calculated on the basis of a maximum audible coloration of $\pm 0.5\text{dB}$. Following the guidelines provided, the most discerning listener will be unable to detect any coloration introduced by the speaker wire. Most listeners will not notice any effect even if wire lengths are increased by as much as 50%.

2. Wire Connection and Proper Phasing

It is necessary to follow the next procedure carefully to assure that both speakers are properly connected and phased. (See Figure 3.)

- Strip approximately 1/2 inch of insulation from each end of the wires. Make sure that there are no loose wire strands.
- Place the "Part 1" speaker (identified by the rear label) on the left side of your room. Next, locate the "Pos" and "Com" connection terminals on the rear of the speaker.
- Connect one conductor of the speaker wire to the terminal marked "Com" on the speaker. (The wire may be identified by a ribbed line(s) on the insulation or by the color of the wire.) Next connect the other end (of the same wire) to the terminal marked "com," "negative," or "minus," on the left channel of your amplifier.
- In the same manner, connect the "Pos" terminal on the left speaker to the terminal marked "Pos," "positive," or plus on the left channel of the amplifier.*
- Place the "Part 2" speaker on the right side of the room and repeat the connection procedure for the right amplifier channel.
- If there is a question whether the speakers are properly phased, a simple test can determine if your connections are correct. First, adjust your equipment for "mono" and play music containing deep bass through your speaker system. With the speakers pointed toward each other, the sound should come from a point near the center of the speakers with the music natural and full. (Be sure that the balance control on your amplifier is set in the center or "normal" position during this test.)

*If your amplifier has a choice of impedances on the amplifier output, use the terminals marked "8" or 8 ohms.

If the sound is not localized between the speakers and is lacking in bass, it's possible that one set of speaker connections is reversed. Reverse the connections to **one** speaker only and repeat the test.

3. Fusing Your 601s

Any loudspeaker may be damaged if the amplifier powering it should fail. Fusing your speakers will minimize the possibility of damage due to either amplifier failure or "overdriving" the speaker by a large amplifier. When using amplifiers producing over **50 watts** per channel, your Model 601 speaker should be fused. It is important to

realize that overdriving your amplifier (playing so loud that serious distortion results) generates excessive high frequency energy that can damage the tweeters **even with a low power amplifier**.

Referring to the speaker connection diagram, the fuse-holders should be inserted in the positive wire connecting each speaker. Be sure to place the fuse in an easily accessible location. BOSE Corporation recommends use of a 2-ampere, fast-acting Buss AGC Series or Littelfuse AG Series. A fuse kit containing fuses and holders can be obtained from BOSE Customer Service Department for \$5.00. Ask for part number 109245.

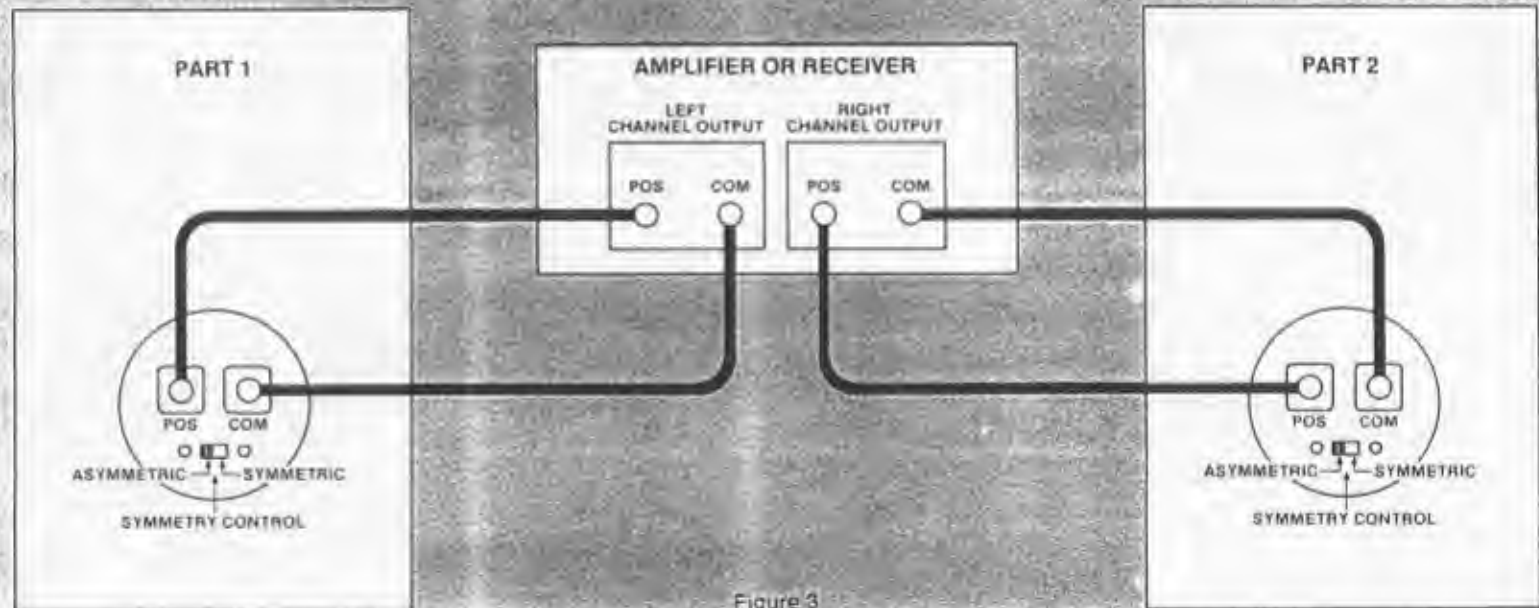


Figure 3

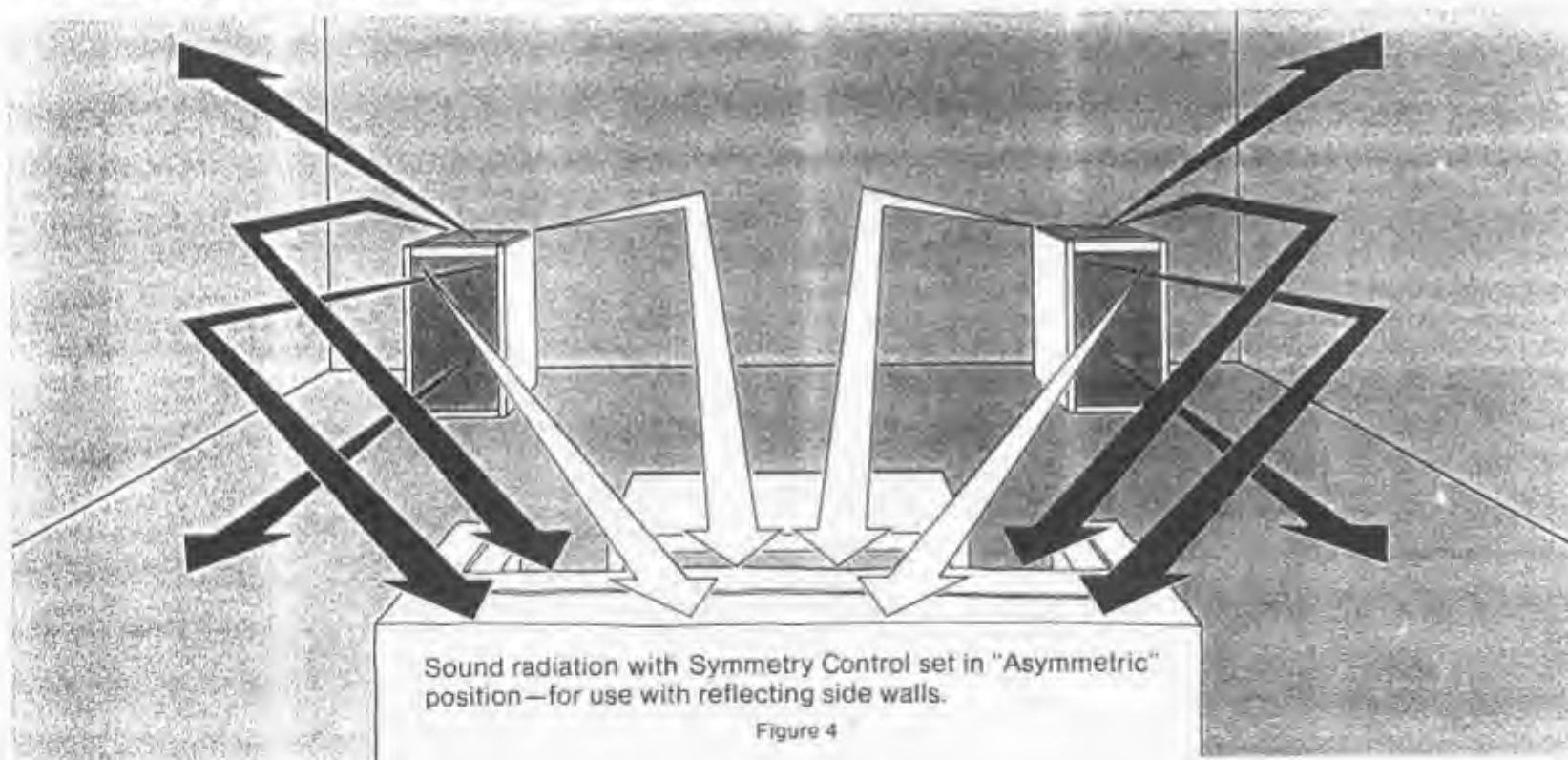
Installation Instructions

C. SYMMETRY CONTROL

Conventional speaker systems contain one or more passive electronic components (called a crossover system) that divide the amplifier signal between the woofer and tweeter. While the Model 601 crossover still provides this basic "dividing" function, it incorporates a Symmetry Control that permits the spatial performance of the speaker system to be matched to your room's acoustics. (See Figures 4 and 5.) This

control, located below the speaker terminals on the rear of the enclosure, has two settings: "Symmetric," and "Asymmetric."

The effect of the Symmetry Control is subtle and will generally be appreciated by more sophisticated listeners. Its incorporation in the Model 601 reflects BOSE's desire to provide the finest performance to all listeners.

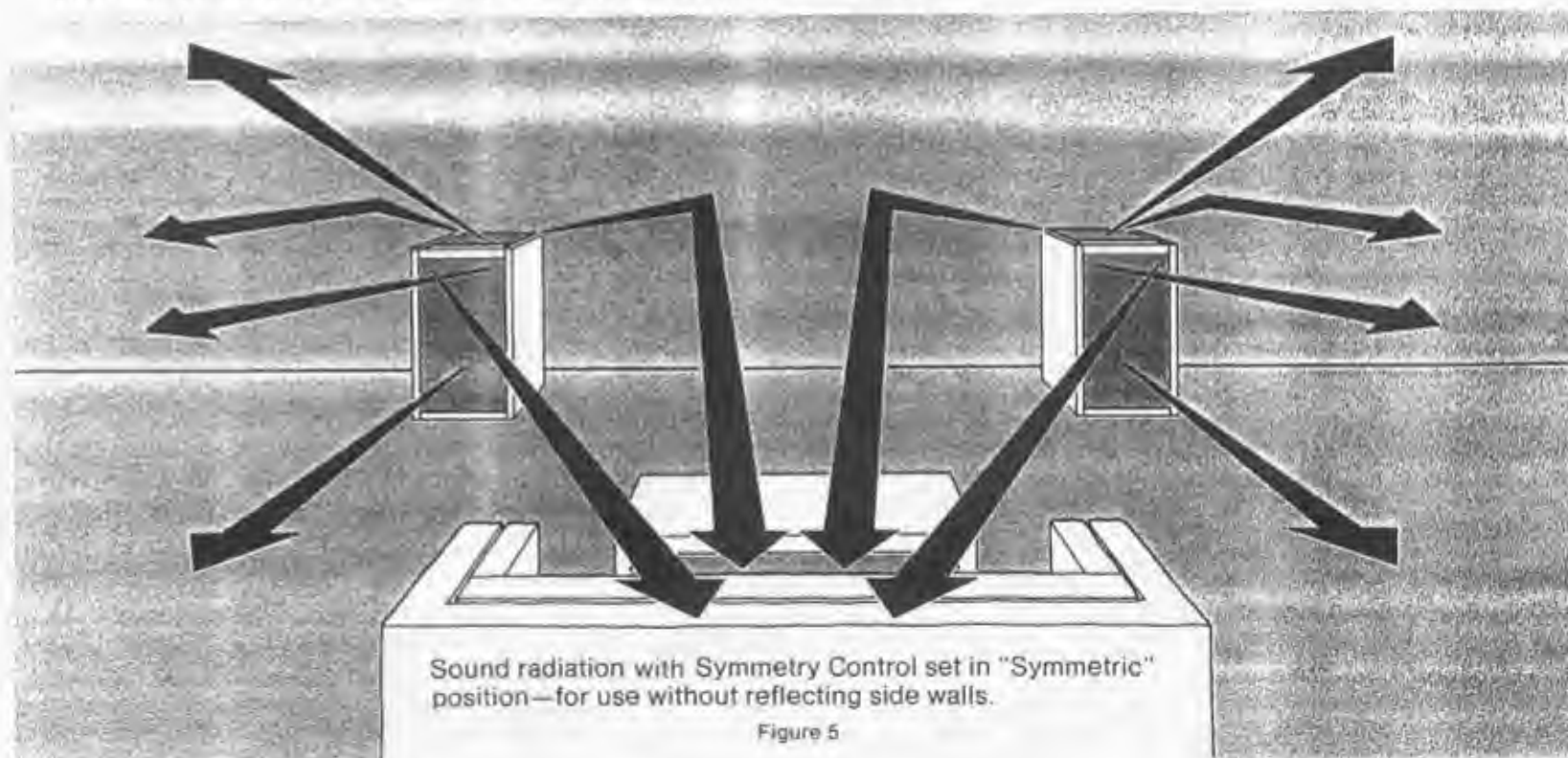


With the Symmetry Control set in the "Asymmetric" position, the tweeters directed toward the side walls radiate a higher proportion of high frequency sound energy than do the center-directed tweeters. This provides maximum spaciousness with an excellent center image. See Figure 4.

The "Symmetric" position of the Symmetry Control should be used when your listening room does not have reflecting side wall surfaces. (See Figure 5.) In this position, equal

high frequency energy is radiated by all four tweeters to maintain proper tonal balance.

Generally speaking, adjusting the Symmetry Control as outlined above will optimally match the Model 601 to your listening room's acoustics. However, you are encouraged to experiment with both Symmetry Control adjustments as these settings must ultimately reflect your personal listening tastes.



V. Room Acoustics

The Model 601 provides outstanding performance in a wide variety of listening rooms. A particular virtue is its ability to provide an unusually large "Best Listening Area." However, the acoustics of the listening room will affect the quality of sound reproduced by any speaker system. Although the science of room acoustics is a complex one, there are steps that can be taken to optimize the acoustics of your listening room.

One of the most common problems relates to rooms that sound too "bright." This occurs when the room contains very few furnishings and has bare walls and floors. The result is normally a shrill or harsh sound. A simple test to determine the "liveness" of your room can be accomplished by clapping your hands together. If you hear a ringing or echoing sound, your room is overly "live" or "bright." The addition of carpeting, wall hangings, or drapes will usually help to remedy this problem.

If your listening area contains heavily stuffed furniture, wall-to-wall carpeting, and heavy drapes, etc., you may find that the sound coming from your speakers is lacking in high-frequency energy. Rooms like this sound dull and lifeless and are often referred to as acoustically "dead." By removing some of the absorbent furnishings, the tonal balance of the system can be improved.

The low frequencies of any speaker system radiate equally in all directions. Because of this, the wall behind the speaker and adjacent side walls reinforce these lower frequencies. The bass response of the 601 can be altered by changing the position of the speaker in relation to nearby walls and corners.

If the speakers seem to be lacking in bass, moving the speakers closer to the rear wall or nearer to a corner of the room will increase the bass response.*

If your system tends to produce a bassheavy, or "booming" sound, move the speakers away from the corner wall. Next, move the speaker away from the rear wall.* Also try using the

low-cut filter of your amplifier (if equipped with one) as this may restore a more natural tonal balance.

Many room acoustic problems can be improved by using the bass and treble controls of your amplifier. You are encouraged to use your amplifier tone controls to adjust the sound quality to suit your listening room's acoustics and your personal listening tastes.

*See Section IV A. Speaker Placement, for recommended distances.

VI. Technical Information

A. SPECIFICATIONS

1. Spatial Characteristics

Asymmetric Design for optimum stereo reproduction utilizing rear and side wall reflections. Two woofers, one reflecting, one direct. Four tweeters angled toward the rear walls, side walls, and listening area. Two-Position Symmetry Control: Asymmetric—side directed tweeters receive greater high-frequency excitation than center-directed tweeters; Symmetric—for speaker placement without adjacent reflecting walls, all tweeters are equally excited. Designed in mirror-image pairs for stereo reproduction.

2. Speaker Configuration

WOOFER: Two eight-inch, high-efficiency woofers utilizing long-throw, one-inch voice coils. Linear high-excursion suspension systems providing high output capability.

TWEETER: Four three-inch, high-sensitivity, wide-range tweeters.

ENCLOSURE: A walnut veneer floor-standing loudspeaker with ported design and acoustically transparent top.

Crossover Frequency: 2kHz. Impedance: 8 Ohms
Shipping Weight: 46 lbs. Speaker Weight: 36 lbs.
Speaker Dimensions: 25.5" high, 15" wide, 13" deep

3. Power Handling

Minimum Recommended Power: 15 watts rms per channel at 8 Ohms. Amplifiers rated over 70 watts per channel are unnecessary for "live volume" reproduction. Amplifiers over 50 watts per channel should be fused. (See Section IV B.3, Fusing Instructions)

B. IN CASE OF DIFFICULTY:

If you suspect a problem with one of your Model 601s, please take a few minutes of your time to determine whether the defect is in your Model 601 or in some other portion of your high-fidelity system.

If one speaker sounds less brilliant than the other, make certain the Symmetry Control is firmly seated in the correct position.

If one speaker sounds defective, do not switch the speaker cables, as this may damage the speaker. Instead, disconnect the defective speaker's wire at the amplifier output and reconnect to the amplifier channel operating correctly. If the speaker system that sounded defective now plays correctly, the difficulty is not in the speakers or in the speaker wiring.

If the trouble appears in both speakers, connect your Model 601s to another amplifier that is operating properly. If the speakers now operate correctly, the defect is not in the speaker system.

If the trouble persists in one or both speakers, contact your dealer. He will verify the defect and will arrange for service at one of our factory-authorized service agencies, or by the BOSE factory. BOSE Corporation will make every effort to remedy any problem within the terms of the warranty at minimum inconvenience to you.

C. CARE AND MAINTENANCE

Your 601 speaker cabinets are made with an oil-rubbed walnut veneer finish. Any good grade of furniture polish used for wood finishes can be used in normal dusting and cleaning; however, to maintain the beautiful appearance of your 601s, we suggest occasionally rubbing the cabinet with linseed oil. The grille cloths generally require no care, although they may be carefully vacuumed if necessary.

VII. Warranty

FULL 5-YEAR WARRANTY

BOSE warrants this unit to be free from defects in materials and workmanship for a period of five years from the original date of purchase. During that period, BOSE will remedy all such defects without charge for parts or labor, upon return of the unit together with the original sales receipt or other proof of purchase to BOSE or to an authorized BOSE service agency. This warranty does not extend to damage resulting from improper installation, misuse, neglect or abuse, or to exterior appearance.

IN NO EVENT SHALL BOSE BE LIABLE FOR INCIDENTAL OR CONSEQUENTIAL DAMAGES.

Should this unit fail within the warranty period, you should contact your nearest BOSE dealer for service instructions. The dealer may ask you to return the unit together with proof of purchase to him or direct you to return the unit together with proof of purchase to the nearest authorized BOSE service agency. Alternatively, you may elect to send the unit directly to BOSE by carefully following this procedure:

1. Obtain a Return Authorization number from the BOSE Customer Service Department, 100 The Mountain Road, Framingham, Mass. 01701.
2. Return the unit together with proof of purchase to BOSE Corporation, 100 The Mountain Road, Framingham, Mass. 01701, *freight prepaid*, in its original shipping carton. Display the Return Authorization number prominently on the outside of the carton. If you need a new carton, your dealer or BOSE Corporation will provide a free replacement carton. Any damage in transit due to improper packing is not covered by the warranty and will not be recognized as an insurance claim by the transportation companies.

Your unit will be repaired and returned to you at BOSE's expense. If the defects cannot be repaired after a reasonable number of attempts by BOSE to do so, you may elect to receive a refund or replacement, but only if the unit is returned to BOSE free and clear of all liens and other encumbrances.

This warranty gives you specific legal rights, and you may also have other rights which vary from state to state. Some states do not allow the exclusion or limitation of incidental or consequential damages, so that the above limitation may not apply to you.

A postage-paid registration card is provided requesting information about you and your high-fidelity system. The return of this card is encouraged, but is not a condition to coverage under this warranty.

The logo for BOSE, featuring the word "BOSE" in a bold, italicized, sans-serif font with a registered trademark symbol (®) to the upper right.

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